REMARKS

Claims 1-46 are pending in the present patent application. Claims 2-12 and 25-35 are allowed. Claims 1, 14, 18, 21, 24, 37 and 41-45 stand rejected; and claims 13, 15-17, 19, 20, 22, 23, 36, 38-40 and 46 stand objected to. This application continues to include claims 1-46.

Applicants thank the Examiner for allowing claims 2-12 and 25-35.

The Examiner has objected to claims 13, 15-17, 19, 20, 22, 23, 36, 38-40 and 46 as being dependent upon a rejected base claim, but has indicated that claims 13, 15-17, 19, 20, 22, 23, 36, 38-40 and 46 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants thank the Examiner for the indication of allowability regarding claims 13, 15-17, 19, 20, 22, 23, 36, 38-40 and 46. However, in view of Applicants response to the rejection of claims 1, 18, 24 and 41, Applicants respectfully request the Examiner to withdraw the objection to claims 14, 19-23, 37, and 44.

Claims 1, 14, 18, 21, 24, 37 and 41-45 were rejected under 35 U.S.C. §102(b) as being unpatentable over Harriman, et al., U.S. Patent No. 6,244,765 B1 (hereinafter, Harriman). Applicants respectfully request reconsideration of the rejection of claims 1, 14, 18, 21, 24, 37 and 41-45 in view of the following.

Harriman is directed to a vibration isolating attachment system for securing a drive belt to an inkjet printhead carriage for increasing print quality (col. 1, lines 6-8). Harriman discloses a vibration isolating attachment system 90 for coupling a carriage drive belt 78 to a carriage 40 (col. 5, lines 57-59, Fig. 3). The attachment system 90 has a pair of vibration isolating attachment members, coupling members or links 95 in the shape of an I-beam formed from an elastomeric material (col. 5, lines 63-67, Fig. 3).

The vibration isolating attachment members 95 link the drive mechanism to the inkjet printhead carriage 40 to isolate the carriage from at least some of the vibrations generated by the drive motor 85, and being made of a resilient material, vibration transferred from operation of the motor 85 through belt 78 to the belt interface 80, is isolated and dampened in any of the X, Y, Z or composite directions, including twisting or torsional vibrations, transients and harmonics (col. 6, lines 16-27). The damping characteristics of the attachment members 95 may be easily modified for different styles and models of printers by making dimensional and material changes to the attachment members 95 (col. 6, lines 64-67). Since the elastomeric nature of the attachment links 95 allows stretching all directions, vibrations in any direction are dampened (col. 6, line 67 to col. 7, line 3).

Applicants believe that claims 1, 14, 18, 21, 24, 37 and 41-45 patentably define Applicants' invention over Harriman, for at least the reasons set forth below.

Claim 1 is directed to an interface device for attaching a printhead carrier to a carrier drive belt.

Claim 1 recites, in part, an isolator coupled between said belt holder and said printhead carrier, said isolator being configured to provide directionally dependent filtering along a main scan direction of said printhead carrier of vibrations propagating to said printhead carrier.

Applicants respectfully submit that Harriman does not disclose, teach, or suggest an isolator coupled between the belt holder and the printhead carrier, the isolator being configured to provide directionally dependent filtering along a main scan direction of the printhead carrier of vibrations propagating to the printhead carrier.

Rather, Harriman discloses the use of vibration isolating attachment members that damp vibrations in various direction, but *without* providing directionally dependent filtering, much less

directionally dependent filtering along a main scan direction of the printhead carrier of vibrations propagating to the printhead carrier, as recited in claim 1.

In rejecting claim 1, it is asserted that Harriman discloses directionally dependent filtering along a main scan direction of the printhead carrier, with reliance placed on Harriman from column 5, line 55 to column 7, line 3, and Figs. 2 and 3.

However, in contrast to claim 1, Harriman discloses a vibration isolating attachment system 90 for coupling a carriage drive belt 78 to a carriage 40 (col. 5, lines 57-59, Fig. 3), wherein the attachment system 90 has a pair of vibration isolating attachment members, coupling members or links 95 in the shape of an I-beam formed from an elastomeric material (col. 5, lines 63-67, Fig. 3).

Harriman also discloses that the vibration isolating attachment members 95 link the drive mechanism to the inkjet printhead carriage 40 to isolate the carriage from at least some of the vibrations generated by the drive motor 85, and being made of a resilient material, vibration transferred from operation of the motor 85 through belt 78 to the belt interface 80, is isolated and dampened in any of the X, Y, Z or composite directions, including twisting or torsional vibrations, transients and harmonics (col. 6, lines 16-27).

Thus, although Harriman discloses that vibration isolating attachment members 95 isolate the carriage 40 from some of the vibrations generated from the operation of the motor 85, and that the vibration may be isolated and damped in any of the X, Y, Z or composite directions, including twisting or torsional vibrations, transients and harmonics, Harriman simply does not disclose, teach, or suggest in any manner that the damping provided by vibration isolating attachment members 95 in any of the disclosed directions yields directionally dependent filtering. There is

simply no filtering performed by the Harriman apparatus that is directionally dependent, i.e., where the filtering is dependent upon direction.

In the Response to Arguments, it is asserted that Harriman discloses a pair of vibration isolating attachment members that dampen vibration in any direction, and that no where in the claim does it state that the directionally dependent filtering of vibrations is different for each scan direction of the printhead carrier.

However, although Harriman discloses dampening vibrations in any of various directions, Harriman simply does not disclose, teach, or suggest that the damping is directionally dependent, i.e., that the amount of dampening depends on the direction, such as might otherwise constitute the "directionally dependent" aspect of claim 1, much less that the dampening is directionally dependent filtering along a main scan direction, as recited in claim 1.

In addition, Harriman does not disclose, teach, or suggest that the Harriman invention would lend itself to providing directionally dependent filtering along a main scan direction.

Rather Harriman does not disclose, teach, or suggest any features or compositions of vibration isolating attachment members 95 as would provide directionally depending filtering along a main scan direction.

For example, Harriman describes the vibration isolating attachment members 95 jointly, without differentiating between each of the vibration isolating attachment members 95, including the description of the materials from which the vibration isolating attachment members 95 may be constructed, and the hardness (col. 6, lines 1-9), and the physical geometric features of the vibration isolating attachment members 95 (col. 6, lines 9-15).

However, Harriman does not in any manner disclose, teach, or suggest that the materials or hardness or physical features of the vibration isolating attachment members 95 are configured

such that vibration isolating attachment members 95 would provide directionally depending filtering.

Although Harriman discloses that configurations other than I-beams may be used, Harriman does not in any manner disclose, teach, or suggest that any of those configurations would provide directionally dependent filtering along a main scan direction of the printhead carrier.

Also, Harriman Fig. 3 illustrates a symmetric system that is not in any manner disclosed, taught or suggested as being capable of providing directionally dependent filtering along a main scan direction of the printhead carrier.

Further, Harriman simply does not in any way disclose, teach, or suggest recognition of a problem pertaining to carrier drive characteristics resulting in vibration being different depending on the direction of travel, and hence, does not disclose, teach, or suggest knowledge of the problem to be solved by Applicants' invention.

For example, Applicants respectfully direct the Examiner's attention to Applicants' specification at page 2, lines 1-10, which is reproduced below for the sake of convenience.

> None of the prior systems, however, are designed to account for variations in the vibrations based on the direction of travel of the printhead carrier. For example, in one common carrier drive configuration, the carrier is transported in one direction by a direct pulling of the carrier by the carrier motor pulley, whereas to transport the carrier in the opposite direction, the carrier motor pulley indirectly pulls the carrier via an idler pulley. Thus, the mechanism for transporting the carrier has different drive characteristics depending on the direction of carrier travel, and accordingly, has differing vibration characteristics depending on the direction of carrier travel.
>
> What is needed in the art is a device that provides directionally dependent damping of vibrations in a printhead carrier system, including its drive mechanism. (Emphasis added).

Applicants respectfully submit that Harriman does not disclose, teach, or suggest any recognition of a problem associated the mechanism for transporting the carrier having different drive characteristics depending on the direction of carrier travel, and accordingly, having differing vibration characteristics depending on the direction of carrier travel.

Since Harriman fails to recognized the problem of having differing vibration characteristics depending on the direction of carrier travel, there would be no apparent reason for Harriman to provide directionally depending filtering of vibrations along a main scan direction of the printhead carrier, which supports Applicants' contention that Harriman does not disclose, teach, or suggest directionally depending filtering of vibrations along a main scan direction of the printhead carrier.

Harriman does not disclose, teach, or suggest otherwise, and also does not disclose, teach, or suggest any other knowledge or rationale for providing directionally depending filtering of vibrations along a main scan direction of the printhead carrier.

For at least the reasons set forth above, Applicants respectfully submit that the relied-upon Harriman passage and figures do not support the proposition of directionally dependent filtering, but rather, simply discloses that damping may be performed in any of various directions, but without in any manner disclosing, teaching or suggesting that the damping provided in any of the disclosed direction is dependent on the direction or otherwise yields directionally dependent filtering along a main scan direction of the printhead carrier of vibrations propagating to the printhead carrier, as recited in claim 1.

MPEP 2131 provides that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art

reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

However, for at least the reasons set forth above, Applicants respectfully submit that Harriman does not disclose, teach, or suggest directionally dependent directionally dependent filtering along a main scan direction, and hence, each and every element as set forth in claim 1 is not found, either expressly or inherently described in a single prior art reference.

Accordingly, Harriman does not anticipate claim 1 under MPEP 2131.

In addition to the above, the asserted Harriman isolator is not coupled between the belt holder and the printhead carrier, as recited in claim 1.

Rather, the Harriman vibration isolating attachment members 95 are coupled between drive belt interface member 80 and an intermediate component.

For example, Harriman discloses that carriage 40 has an upright back wall portion 65 (col. 5, line 14), and that carriage interface member 70 is joined to the rear surface of the carriage wall 65 (col. 5, lines 27-28). Each attachment member 95 includes a web 100 that fits in slots 94 of carriage interface member 70 and slots 92 of drive belt interface member 80 (col. 6, lines 9-15, Fig. 3).

Thus, the vibration isolating attachment members 95 are coupled between a drive belt interface member 80 and carriage interface 70.

Accordingly, for at least the reasons set forth above, Applicants respectfully submit that Harriman does not disclose, teach, or suggest the subject matter of claim 1.

Claim 1 is thus believed allowable in its present form.

Claim 14 is directed to the interface device of claim 1, said isolator having a center of mass, and a centerline of said belt holder being spaced from said center of mass of said isolator by a distance along said main scan direction of said printhead carrier.

Claim 14 is believed allowable due at least to its dependence on otherwise allowable base claim 1.

Claim 18 is directed to a method for attaching a printhead carrier to a carrier drive belt.

Claim 18 recites, in part, coupling an isolator between said belt holder and said printhead carrier, said isolator being configured to provide directionally dependent filtering along a main scan direction of said printhead carrier of vibrations propagating to said printhead carrier.

Applicants respectfully submit that Harriman does not disclose, teach, or suggest coupling an isolator between the belt holder and the printhead carrier, and does not disclose, teach, or suggest an isolator being configured to provide directionally dependent filtering along a main scan direction of the printhead carrier of vibrations propagating to the printhead carrier, as recited in claim 18, for substantially the same reasons as set forth above with respect to claim 1.

Accordingly, for at least the reasons set forth above, Applicants respectfully submit that Harriman does not disclose, teach, or suggest the subject matter of claim 18.

Claim 18 is thus believed allowable in its present form.

Claim 21 is directed to the method of claim 18, said isolator having a center of mass, and a centerline of said belt holder being spaced from said center of mass of said isolator by a distance along said main scan direction of said printhead carrier.

Claim 21 is believed allowable due at least to its dependence on otherwise allowable base claim 18.

Claim 24 is directed to an imaging apparatus. Claim 24 recites, in part, an isolator coupled between said belt holder and said printhead carrier, said isolator being configured to provide directionally dependent filtering along a main scan direction of said printhead carrier of vibrations propagating to said printhead carrier.

Applicants respectfully submit that Harriman does not disclose, teach, or suggest an isolator coupled between the belt holder and the printhead carrier, and does not disclose, teach, or suggest the isolator being configured to provide directionally dependent filtering along a main scan direction of the printhead carrier of vibrations propagating to the printhead carrier, as recited in claim 24 for substantially the same reasons as set forth above with respect to claim 1.

Accordingly, for at least the reasons set forth above, Applicants respectfully submit that Harriman does not disclose, teach, or suggest the subject matter of claim 24.

Claim 24 is thus believed allowable in its present form.

Claim 37 is directed to the imaging apparatus of claim 24, said isolator having a center of mass, and a centerline of said belt holder being spaced from said center of mass of said isolator by a distance along said main scan direction of said printhead carrier.

Claim 37 is believed allowable due at least to its dependence on otherwise allowable base claim 24.

Claim 41 is directed to an imaging apparatus. Claim 41 recites, in part, a printhead carrier having a receptacle configured for mounting said isolator, said receptacle having a first thrust wall and a second thrust wall spaced apart from said first thrust wall along a bi-directional main scan direction of said printhead carrier, said isolator being retained between and in engagement with said first thrust wall and said second thrust wall, wherein a structural geometry of said second thrust wall is different than a structural geometry of said first thrust wall to adjust an amount of

dampening in each direction along said bi-directional main scan direction to provide directionally dependent filtering of vibrations propagating to said printhead carrier.

In contrast to a printhead carrier having a receptacle configured for mounting an isolator, Harriman discloses that carriage 40 has an upright back wall portion 65 (col. 5, line 14), and that carriage interface member 70 is joined to the rear surface of the carriage wall 65 (col. 5, lines 27-28). Each attachment member 95 includes a web 100 that fits in slots 94 of carriage interface member 70 and slots 92 of drive belt interface member 80 (col. 6, lines 9-15, Fig. 3).

Thus, Harriman discloses that carriage interface member 70 has slots 94 for mounting each attachment member 95.

Carriage interface member 70 is not a printhead carrier, but rather, is an interface member that is joined to a back wall of the Harriman carriage 40.

Accordingly, Harriman does not disclose, teach, or suggest a printhead carrier having a receptacle configured for mounting an isolator, as recited in claim 41.

In addition, Harriman does not disclose, teach, or suggest providing directionally dependent filtering of vibrations for substantially the same reasons as set forth above with respect to claim 1.

Further, Harriman simply does not disclose, teach, or suggest a structural geometry of a second thrust wall being different than a structural geometry of a first thrust wall to adjust an amount of dampening in each direction along the bi-directional main scan direction.

Rather, Harriman discloses the use of two similar vibration isolating attachment members 95 that are inserted into slots which are not disclosed as having structural geometry of a second thrust wall different than a structural geometry of a first thrust wall, much less to adjust an amount of dampening in each direction along the bi-directional main scan direction.

For example, each vibration isolating attachment member 95 has a web 100 that is fitted inside slots 92 of drive belt interface member 80 and also slots 94 of carriage interface member 70 (col. 6, lines 9-15). Based on Figs. 2 and 3, it is seen that foot portion 98 fits into slot 94, and that the two inner protrusions, not identified, secure web 100 and retain feet 98, and that the web 100 is what transmits load between drive belt interface member 80 and carriage interface member 70 in the main scan direction.

However, Harriman does not in any manner describe that slots 92 and/or slots 94 have a structural geometry of a second thrust wall that is different than a structural geometry of a first thrust wall, as recited in claim 41.

Rather, in Fig. 3, the slots 92 and slots 94 are depicted as having the same structural geometry on each side of the slots, and hence, any first thrust wall has the same geometry as a second thrust wall. The Harriman specification does not disclose, teach, or suggest otherwise.

Also, Harriman simply does not in any manner disclose, teach, or suggest wherein any thrust wall geometry is used to adjust an amount of dampening in each direction along the bi-directional main scan direction. Rather, although Harriman discloses dampening of vibrations in various directions (col. 6, lines 23-27), and that damping characteristics may be modified for different styles and models of printers (col. 6, lines 64-67), Harriman does not disclose, teach, or suggest any information tantamount to adjusting an amount of dampening in each direction along the bi-directional main scan direction, as recited in claim 41.

Accordingly, for at least the reasons set forth above, Applicants respectfully submit that Harriman does not disclose, teach, or suggest the subject matter of claim 41.

Claims 42-45 are believed allowable due to their dependence on otherwise allowable base claim 41. In addition, claims 42-45 further and patentably define the invention over Harriman.

For example, claim 43 is directed to the imaging apparatus of claim 41, said second thrust wall being shorter in length than said first thrust wall.

As set forth above with respect to claim 41, Harriman does not disclose, teach, or suggest that slots 92 and/or slots 94 have thrust walls with differing geometry, and hence, Harriman does not disclose, teach, or suggest the second thrust wall being shorter in length than the first thrust wall.

In addition, Harriman does not disclose, teach, or suggest that both of the asserted first and second thrust walls are thrust walls.

Further, under MPEP 2125, proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale. Harriman does not indicate that Fig. 3 is to scale, and hence the proportions of the asserted first and second walls in Fig. 3 are not evidence of actual proportions.

Still further, Harriman does not otherwise disclose, teach, or suggest a second thrust wall being shorter in length than a first thrust wall.

Claim 43 is thus believed allowable in its own right.

Claim 44 is directed to the imaging apparatus of claim 41, said second thrust wall being shorter in height than said first thrust wall.

As set forth above with respect to claim 41, Harriman does not disclose, teach, or suggest that slots 92 and/or slots 94 have thrust walls with differing geometry, and hence, Harriman does not disclose, teach, or suggest the second thrust wall being shorter in height than the first thrust wall.

In addition, Harriman does not disclose, teach, or suggest the subject matter recited in claim 44 for substantially the same reasons as set forth above with respect to claim 43.

Claim 44 is thus believed allowable in its own right.

Accordingly, for at least the reasons set forth above, Applicants respectfully submit that Harriman does not disclose, teach, or suggest the subject matter of claims 1, 14, 18, 21, 24, 37 and 41-45, and thus respectfully request that the rejection of claims 1, 14, 18, 21, 24, 37 and 41-45 under 35 U.S.C. 102(b) be withdrawn.

For the foregoing reasons, Applicants submit that the cited reference does not disclose, teach, or suggest the subject matter of the appended claims. The appended claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorize that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (317) 894-0801.

Respectfully submitted,

/Paul C. Gosnell/

Paul C. Gosnell
Registration No. 46,735

Attorney for Applicants

RKA14/ts

TAYLOR & AUST, P.C.
12029 E. Washington Street
Indianapolis, IN 46229
Telephone: 317-894-0801
Facsimile: 317-894-0803

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